THE VETERINARY RECORD

A Weekly Journal for the Profession.

EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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EDITORIAL NOTES.

We made a mistake last week in suggesting that the next meeting of Council would take place on the day before the Derby. Our Charter requires that a Council meeting for the election of officers shall take place within one month of the Annual General Meeting, and therefore the meeting may be postponed to the third or fourth of June. From time immemorial the meeting has been arranged for the day preceding the Derby, so as to suit the convenience of members who desire to attend at Epsom. The fixture has almost become a recognised one, but this year, owing to the arrangements of the Examining Board, the usage must be departed from. Not until the Epsom meeting is over will the examiners have finished their duties in Scotland, and therefore a meeting of Council on the usual day would render it impossible for any member of the Examining Board or any member of the professional staff of three Colleges to attend.

We trust the delay till June will result in an extra large attendance of members and an extra careful selection of officers for the year.

At the June meeting one duty of the Council is the election of Committees for the year. The custom is to re-elect these bodies *en bloc* with any additions suggested by members. The result of this perfunctory business is that most of our Committees are far too large, and individual members refrain from attending as they ought to under the idea that there are plenty of men to take their places. Large committees end always in small attendances; and it is time we adopted a suggestion by Mr. Kidd—that the number on each Committee should be limited to seven. If we had small committees each member would recognise his duty and the collective attendance would be improved. The present system of election of committees is utterly rotten. No care is taken to select men specially fitted for the duties required, and no attention is paid to the attendance of members during the past year. Some prominent men on the Council are elected on nearly every committee irrespective of their fitness, others possessing every essential requirement are left out. This personal system of selection is as unfair to the profession as it is to the individual. Every year a list of attendances is published with the voting papers, and some men are seen to have attended ten committees whilst others have only attended two. The larger attendance may mean nothing, except that the individual who has the largest register has had five times the opportunity of the other. It is time the constitution of committees was looked into, and the election made with distinct reference to the capabilities of the candidate. It is time also that the number of each committee was limited, so as to ensure some sense of responsibility for attendance. The sub-committee entrusted with the consideration of the New Charter numbered nineteen members on paper. The average attendance was five, and matters of the greatest importance to the profession were reported on by three individuals. One Committee we hope to see done away with entirely at next Council meeting—viz., the Parliamentary. We have no parliamentary work, and no such committee is necessary. It represents nothing, and its members are selected entirely upon some principle foreign to the utility of any official position. In view of the practical adoption of a new Charter the parliamentary committee may this year be very properly displaced by a Charter Committee, which would be a useful and intelligible appointment. Such a body might be selected upon the common-sense grounds of being necessary, and the men elected to it might be chosen with some regard to the fitness of their pretensions. Half the work of the Council is done in Committee, and surely it would be better done by small bodies selected for their knowledge of, or interest in the work, than by larger bodies chosen promiscously, who seldom attend.

In our correspondence column will be found a letter from Mr. Bowhill in reference to the question of pleuro-pneumonia which is said to have been detected in American live-stock landed at Deptford. Mr. Bowhill poses as an authority on microscopic work and on literary style. He asserts boldly that Professor Williams is right and the other four experts wrong, and he makes some comparison between the editorial methods of *The Record* and *Modern Society*. He may be right; and we certainly do not intend to dispute his views. We profess neither microscopic ner literary abilities, and we do not question Mr. Bowhill's close acquaintance with the microscope and with *Modern Society*.

All we said, and all we say, is that the veterinary profession are not inclined to accept the dictum of Professor Williams when opposed to that of Professors Brown, Duguid, Cope, Walley and McFadyean, even if supported by the assent of Mr. Bowhill. The demonstration of the difference between Pleuro-pneumonia and Broncho-pneumonia may or may not be easy—it is decidedly not to be settled by micro-photography. Very shortly the National Veterinary Association meet at Doncaster, and there will

assemble experts of all kinds. We would suggest that Professor Williams and Mr. Bowhill should then demonstrate the marked differences between the disease found in the American Cattle and the disease we English practitioners have been wont to recognise as pleuro-pneumonia. The differences may be glaring, and if so, no more desirable demonstration could be given. If a number of our leading authorities are blind to facts easily seen, Mr. Bowhill will deserve well of his profession by making clear the errors into which they have fallen.

CASES AND ARTICLES

"EASING" THE HEELS.

By W. Hunting, F.R.C.V.S.

Of methods of fitting horse-shoes there is no end, but there must be a right way and a wrong. I grant of course that every foot requires the shoe to be specially fitted to it, and I allow that there is no principle which is capable of rigid adoption to every foot. There are, however, general broad principles of shoeing which may be put in practice on all healthy feet. One of these principles is that the shoe should rest evenly on the whole bearing surface—*i.e.*, on the wall from the toe to the heel. In other words, a shoe should have a level bearing on the whole outer circumference of the foot.

It is difficult to see how any other method of shoeing should ever have been adopted, but it is a fact that in London, and some few other districts the farrier has accepted a theory that the heels will not stand their share of bearing, and the practice has arisen of "easing" the heels. This so called "easing" of the heels may be brought about in two ways—either by lowering the wall at the heels a little below the level of the rest of the bearing surface, or by sloping the surface of the shoe at its extremities. Both plans result in a space being left at the heels between the shoe and the hoof into which the blade of a knife, or even a half-crown in some cases, may be placed. The result is that no proper bearing of the hoof on the shoe takes place at the extremities for about one and a half inches. The supposed effect of this is to "ease" the heels. The real effect is to destroy the proper bearing surface, and to concentrate an uneven pressure on the part at which horn and shoe fairly meet. The result is that the quarters are damaged by the extra pressure thrown upon them, and that at least a sixth of the natural bearing surface is lost. Of all the wilful evils perpetrated by farriers this is one of the worst, because its injurious effects are insidious and apt to be overlooked. Very often I have seen cases of lameness which ceased immediately on the shoe or foot being altered so as to give a level bearing throughout. In horses in which this practice has been continued for some time, a *post-mortem* examination will show that the injurious extra pressure thrown upon the quarters has damaged the wings of the coffin bone, which are found to be altered in shape—instead of resting level on a flat surface, such as a table, the extremities are removed from bearing by absorption of their under surface.

The so called "easing" of the heel does not remove the part from bearing. Every time the weight of the horse is placed upon the foot, the hoof is forced down in contact with the shoe, and thus is caused an on and off pressure instead of the constant diffused bearing which should exist. Probably the practice arose from an idea that it might assist in the prevention of corns. As a fact it does not; and corns are frequent in horses so shod. Corns are not found at the point of the heel but rather in advance of it. When a shoe rests evenly upon the whole bearing surface its extremity comes far behind the seat of corn and rests upon a very strong surface, viz., the double layer of wall formed by the inflection inward to form the bars, as well as the outer main portion. When a shoe is "eased" at the heels the spot where it and the hoof take a level bearing is just over the seat of corn, and accidental bruising is then more likely to happen.

Until recently we never heard an attempt to give any anatomical or physiological reason for this practice. We are now told that it is based upon the action of the healthy foot, which yields posteriorly in a downward direction; and that if this action is not provided for by a space between hoof and shoe the sensitive tissues are pinched and bruised. I allow that the back part of the foot is capable of yielding downwards, and the proof of it is seen in cases where "easing" the heels is practised. In such cases the shoe is marked with a groove as the result of the horn coming down on to the shoe, but this only occurs in the conditions abnormally produced. A horse without shoes, on a level road takes a bearing surface on the whole of the circumference of the wall and nature provides no possibility for this downward movement. A level road is eqivalent, so far as bearing surface goes, to a level shoe, and I know of no more harmless place for a horse to travel on. For years I have insisted on all horses being shod with a level bearing on both foot and shoe, and I have never been able to trace any injury to this practice. On the contrary I have frequently seen injury result from the "eased" heel. I entirely deny that the anatomy or physiology of the foot suggests any "easing," and I maintain that the theory is without foundation as the practice is without benefit.

If the veterinary profession is to take a part in the instruction and direction of farriery it is necessary that we should exhibit some unanimity in our teaching, and that any scientific hypothesis should be well founded before a practice is based upon it. When the practice can be shown to be injurious there is strong reason to believe the hypothesis to be false; and if it can be proved that an opposite practice is carried out daily on thousands of horses without injury, some very clear and cogent reasons must be given for any departure from the simpler plan. The whole circumference of the inferior surface of the hoof takes a bearing in the unshod foot, and science and practice combine to indicate that a similar bearing surface should be adopted with the shod foot.

VETERINARY SOCIETIES.

NATIONAL VETERINARY V.M.A.

Doncaster Meeting.

The next meeting of this Association will be held at Doncaster, on July 21st and 22nd, under the Presidency of Professor Axe.

Subjects—

Tuberculosis—By Professor McFadyean.
Discussion opened by Dr. Fleming.

"*Pink-Eye*"—By Professor Williams.
Discussion opened by Wm. Hunting.

Black-leg and its so-called preventives,
By Professor Penberthy.

J. Abson, Sheffield, } *Hon.*
J. Malcolm, Birmingham, } *Secs.*

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

The usual quarterly meeting of the above Society was held at the Blackfriars Hotel, Manchester, on Wednesday, the 11th of March.

There were present—Mr. Arthur Leather (President). Professor W. Owen Williams, Messrs. Thos. Greaves, Peter and W. Augustus Taylor, Hopkin, Wolstenholme, Locke, Faulkner, and Shore, (all of Manchester). Whittle, Worsley; Eastwood, Northwich; Dale, Chorlton c- Hardy; Bennett, Leigh; Blackhurst, Broughton; Woods, Wigan; Armstrong, Accrington; Roberts, Liverpool; and Gartside Mayor, Secretary, Kirkham.

The Secretary read notice of meeting. Minutes of last meeting were read and confirmed. Apologies for non-attendance were received from several gentlemen.

Mr. Wm. Whittle thanked the members for the honor they had done him in again proposing him as a Member of Council.

Mr. W. Augustus Taylor gave notice that at the next meeting he would bring forward the question of the employment of a shorthand reporter at our ordinary meetings.

Morbid Specimens.

The Secretary then brought before the meeting the bladder of a two year old filly, from which he had removed a peculiar substance almost a year ago: (exhibited at a previous meeting). The walls of the bladder were enormously thickened and rough in appearance, and various speculations were offered as to the cause of the condition. The President referred to the fact that when a portion of the "calculus" (?) was submitted to microscopical and chemical examination at the Liverpool School of Medicine—it was thought that it must have been introduced from without, this idea was quite in accordance with the Secretary's report that there were traces of laceration about the neck of the bladder at the time of his first seeing the case.

Prof. W. O. Williams said that the museum of the New Veterinary College contained a specimen of a bullock's bladder presenting similar appearances, but there was no history attached to it.

The following paper was next read

How to make Post-Mortem Examination.

By Professor O. W. Williams.

Mr. President and Gentlemen,

It gave me much pleasure to receive an invitation to come to Manchester to read a paper before your most influential Society. I trust that the subject matter will be of some little value to those present, and will give rise to discussion and suggestions as to improvements in my methods and opinions. I must say before commencing that there are several things which I recommend but which I seldom employ, at the same time occasions do arise when I *do* employ these methods.

In making a perfect *post-mortem* examination, there are at least three different methods to be adopted.

I. By making a naked eye or *macroscopical* examination of the various parts and organs of the body.

II. By the *microscopical* examination of portions of tissues, either in a fresh, or a prepared condition.

III. By attempts to inoculate artificial media, or even other animals, with some of the tissues, so as to cultivate, if possible, any special pathogenic germ which may have been present and which may have caused the disease.

It is hardly possible, in the majority of cases, to come to a really satisfactory and definite opinion as to the cause of death unless, at least, the two first methods are employed.

I now propose enumerating the various appliances with which every establishment should be equipped, so that its veterinary surgeon will be able, when necessary, to make such a perfect examination that his evidence and proofs in a law-court will be unassailable.

One or two, large skinning knives.

One, or two small knives for making careful dissection of important parts.

A couple of strong hooks.

A pair of dissecting forceps.

A pair of scissors.

A saw.

A chisel.

A lever.

A hammer.

Bone forceps.

A pair of India-rubber gloves in cases of glanders, rabies, anthrax, etc.

A pair of snow-shoes or goloshes, or boots which are used for no other purpose.

A bottle of carbolic oil or solution of corrosive sublimate, and a packet of salt to make into solution, so as to dress any wounds which may be on your hands.

A wide mouthed bottle containing spirits of wine, in which to place any portions for future microscopic examinations.

A bottle in which to carry away ingesta suspected of containing poison.

A small box with two or three slides and cover glasses in it, on which to place and dry a little blood for rough microscopic examination.

I think you will agree with me that with this formidable array of material one should be able to make a very perfect *post-mortem* examination, but I would add another item, and that is nutrient gelatine in tubes, a spirit lamp, and a platinum wire, with which to inoculate the gelatine with pieces of the body, so as to try and cultivate germs.

Now, being thus prepared for any emergency, we will proceed to the place of the *post-mortem* and will discover the following facts before commencing.

1:—Age, colour, sex, and marks of identification.

2:—Whether it died or was killed and bled.

3:—How long dead, and on which side it died.

4:—See if there are any discharges from the orifices, or swelling of the parts.

Now the next thing is whether you are personally going to perform the *post-mortem*, or allow someone else to do it while you look on. There are many difficulties which prevent an ordinary practitioner from doing it himself. He has clients to meet, patients to see, and a *post-mortem* all in the same morning, consequently if he makes it himself he will smell of the knackers—and perhaps convey disease into healthy stables. So in the majority of cases he is quite justified in appointing a junior who understands instructions to do the manual part of the work, whilst he, the senior, gives orders, takes notes, and also keeps clean.

We are now in a position to commence work, and I shall confine myself to giving a description of a *post-mortem* in a horse.

5 :—Secure the animal on its back.

6 :—Skin the animal if the hide is of value, and you don't suspect contagious disease.

7 :—Examine for bruises, etc.

8 :—Make an incision from the Zyphoid Cartilage along the linea alba to the pelvis, carefully open the abdominal cavity, and see if the Caput cæcum is in its normal position. Next see if the bowels exposed to view are much distended with gas—this is of importance, as often after death gases accumulate in them to such an extent as to cause rupture of the diaphragm.

Also see if they are covered with particles of food or dung—this usually indicating rupture of stomach or bowels whilst animal was alive.

Observe if fluid be contained in abdominal cavity, also indicating rupture of organs or dropsy.

Now carefully lower the animal to its side, remove the abdominal muscles from the upper side and allow the bowels to fall out.

The bowels should be a pale yellowish colour, but may be green from decomposition, red from peritonitis, black from gangrene and twist, or bright yellow from osmosis from liver after death.

They may have patches of ecchymoses from anthrax or from purpura. Some portions may be intussuscepted or others again be in a condition of hernia and gangrene.

Occasionally we find a calculus, a fœtus, or tumours lying independently in the abdominal cavity.

Next remove the stomach and bowels from the cavity, and examine for ante-mortem ruptures of them. These are recognised by having thickened, ragged and congested edges in contradistinction to ruptures occurring after death from over distension by gases, or accidental ruptures due to a slip of the knife.

Examine the stomach for ulcers, atrophy, bots, calculi, worms, or foreign bodies, or hœmorrhage. Then the pylorns for stricture ; the bowels for strictures, inflammation, ulcers, parasites, calculi, and foreign bodies generally.

The pancreas weighs about seventeen ounces ; but in old horses may be much atrophied.

We next remove the liver. Take note of its weight, which should be about eleven pounds. In colour it should be livid, should have sharpish edges, and be easily cut with the knife—neither too gritty nor too buttery.

Next we may examine the spleen, which in health weighs two and a half pounds, and is azure blue externally, and a deep purple when cut into. It should cut softer than liver.

Passing from there to the kidneys—the right one weighs 27 ounces, and the left one 25 ounces. On section the cortex should be of a red-brown, and the medulla a pale yellow.

These again may be found too large or too small, and one may contain a calculus, which sometimes has caused such atrophy of the kidney, that hardly anything remains but the capsule covering the stone, and hence sometimes the condition is erroneously called calcification of the kidney.

The bladder must be examined for inflammation of its mucous membrane, thickening of its wall, and for calculus.

Examine all arteries and veins for disease.

The ovaries in the mare for tumours, cysts, etc. The uterus for sundry diseases.

Having thus pretty well exhausted the abdominal cavity we next proceed to the thorax.

Saw the sternum through from cariniform to zyphoid cartilage, next saw through the ribs as near the backbone as possible, taking care not to injure any of the organs within. You can now see inside, look for fluid ; lymph ; adhesion of lung to ribs ; fluid in or thickening of pericardium.

Next cut through trachea, and remove lungs and heart from chest. Examine heart sac for pericarditis, the heart, which should weigh about seven pounds, for enlargement, for aneurism of auricle, for fatty or calcareous deposits, for petechial. Inside examine for thrombi, clots, ulcers, abscesses, and diseased valves. Examine large blood vessels for diseases, aneurisms, etc.

Next observe the lungs. In a bled animal they should be red in colour—in an unbled they will be purple ; and the one on the side the animal died will be affected with hypostatic congestion. This may be confounded with true congestion due to disease. Observe if the lung floats in water, if its pleura is clean and shining. Look for abscesses, consolidations, inflammations, exudations and injuries. Then examine bronchial glands for abscesses.

Now open the trachea and examine it for pus, blood, froth, thickened membrane and injuries to its rings. Open the bronchial tubes and search for similar things, also parasites, and foreign bodies such as food or medicine.

Make a careful note of the condition of the larynx—whether its mucous membrane be diseased, or whether its muscles be atrophied or not. Look for abscesses or inspissated pus in the region of the throat.

Examine the tongue for injuries.

Look into the nostrils and sinuses of the head for ulcers and diseased bone or discharges ; also for polypi.

And lastly, open the Cranial cavity and examine the brain, which should weigh about 23 ounces, for thickened membranes, hæmorrhages, exudations and tumours. And finally the cord (10½ ounces) may be examined for thickened membranes or induration of its substance.

This then is a general outline of how I would suggest post-mortem should be made. The second and third methods are to be continued in the Laboratory.

Discussion.

Mr. Peter Taylor confirmed what the essayist had noted in regard to the necessity for care in the preliminary observations in post-mortem, and spoke of the wisdom of having a brother practitioner with us in cases likely to lead to any trouble.

Mr. Thos. Greaves after complimenting the reader proceeded to remark on the frequency of diseased liver in plethoric animals. and with Mr. Taylor spoke of the difficulty of saying how long a time many diseased conditions might, or might not have been in developing. This point was also referred to by several other speakers.

Mr. W. Whittle referred to the fact that Prof. Williams' recommendations were almost precisely identical with those of Professor Dick.

Mr. Hopkin referred to the fact that not very infrequently we meet with cases which do not present any recognisable post-mortem lesions.

Mr. W. Augustus Taylor very pertinently drew attention to the extreme value from an educational point of view of finding ourselves wrong in our diagnosis.

Mr. Locke said that the essayist's suggestions were very valuable in the case of animals which died unexpectedly.

Mr. Faulkner emphasised the fact that ante-mortem rupture of the diaphragm wasnot an infrequent condition.

After Prof. Williams had replied, Mr. Faulkner proposed and Mr. W. A. Taylor seconded, that a hearty vote of thanks be accorded to Prof. Williams for his kindness in coming amongst us, and to the Secretary for exhibiting the morbid specimen.

The usual vote to the chairman concluded the Meeting.

G. GARTSIDE MAYOR, *Hon. Sec.*

EXTRACTS AND NOTES.

THE J. H. STEEL MEMORIAL.

We have sincere pleasure in recording that there was quite a rush to subscribe to the Fund, both at the Annual Meeting and at the Dinner. As most of our readers are aware the objects of the Fund is twofold namely to perpetuate the name of J. H. Steel, by instituting a prize to students of all our schools. The form of the reward will necessarily depend upon the amount of subscriptions realized. No doubt many gentlemen have not come forward yet, owing to an idea that the movement will collapse; let them be assured that the Committee intends to persevere until every vein of gold or silver has been tapped. So many kind offers of assistance have been received. that the President has directed that collecting cards shall be issued to facilitate the work. A number have already been sent out, and the Hon. Secretary will be glad to supply more to any gentleman who wishes to help.

To those gentlemen who have promised subscriptions we would suggest that the work of the Committee will be lightened if they will kindly forward their donations as soon as possible to the Treasurers.

Dr. G. FLEMING, C.B.,
Cathcart Lodge, Tyrwhitt Road, S.E.
F. WRAGG, F.R.C.V.S.,
17 Church Lane, Whitechapel, E.

CHRONIC GLANDERS IN MAN

MM. Hallopeau and Jeanselme (*Annales de Derm. et de Syph.*, April, 1891. p. 1) have had under their care in the Hôpital St. Louis a carman who had received the infection of glanders from one of his horses, and died after suffering from the disease for six years. They remark on the length of time which the disease may exist (six years), and the length of time during which in its course the symptoms may remain stationary (in this case three years). They consider that glanders may be suspected when, after a long series of abscesses, subcutaneous or in the muscles, ulcerations form in the nasal fossæ, the buccal mucous membrane, or on the velum palati, with painful swelling of one lachrymal gland, coinciding with purulent discharge from the nostrils. The abscesses may, after being discharged, heal spontaneously, although this is rare. Inoculations show that the pus which they secrete rapidly loses its virulence, whilst that of the abscesses which become fistulous preserves indefinitely the property of transmitting the disease. The case which they describe appears to be the first recorded in which the ulcers attacked and destroyed the lips. The ulceration is characterised by the absence of swelling of the glands, by the formation of deep sloughs with rapid destruction of the tissues, and by a pustular eruption which may be confined to the skin of the nose. Acute glanders (usually very short) may last more than forty days. Whilst the pus from the ulcerations was virulent, the urine collected during the acute stage gave negative results when inoculated in animals. In the pus obtained from abscesses which had not been opened, the bacillus was found either pure or associated with staphylococcus. To establish the diagnosis rapidly two means are available: cultures on potato, which in a few days acquire the characteristic reddish-brown colour; and inoculations into the peritoneum of guinea-pigs, which are followed within forty-eight hours by inflammation of the tunica vaginalis, with characteristic caseous suppuration. The ulcers of glanders have the following characteristics: The edges are irregular, sinuous at certain points, jagged at others. They are everywhere remarkably clean cut, and undermined by ulcerous excavations. At some points the borders, thus become freed from the subjacent tissues, are retracted and rolled over, as is sometimes found in epithelioma, but they retain their mobility, and do not have the characteristic wooden induration of cancer. From the bottom of the ulcer, winding, vegetating, ulcerating tracts proceed in various directions, particularly under the edges of the ulcer. The surface of the ulceration is continually moistened by a shining discharge, from which there project hemispherical yellowish papules, which might be taken at first sight for pustules.

M. Besnier (*ibid*) describes another case of chronic glanders, the patient having died four or five years after having contracted the malady. The first symptom in this case was a chronic pulmonary affection, of which the symptoms were incessant cough night sweats, abundant expectoration, loss of appetite, emaciation, and debility. It was only after eighteen months or two years that the ordinary symptoms of glanders appeared by the developement of the disease in the left forearm and in the nose.

Brit. Med. Journal,

KOCH'S TREATMENT IN LARYNGEAL DISEASE.

The changes observed by the German laryngologists (*Die Wirksamkeit des Koch'schen Heilmittels gegen Tuberculose*) in cases of tuberculous disease of the larynx, as a result of the injection of Koch's fluid, present almost as many varieties in different cases as do the evidences of the systematic reaction. Fifteen cases are reported Professor B. Fränkel's clinic in Berlin. In most

of these a greater or less degree of redness and swelling of the larynx was produced, but this was not always in proportion to the amount of general febrile disturbance. This observation is corroborated by evidence from the reports of Professors Gerhardt. Weber, Barth, and others. In cases where no evidence of tuberculous disease had been present in the larynx this redness and swelling sometimes appeared after injection, either affecting the whole organ or being limited to individual parts, and especially the posterior wall and arytenoid cartilages. Of the tissues already reddened and swelled by the existent disease, very little change was noted in the simply œdematous swellings, but in the parts infiltrated with tuberculous material a very decided swelling took place, which, as a rule, rose and fell with the rise and fall of the temperature, shrinking after each tumefaction to a somewhat smaller size than before and never causing sufficient narrowing of the glottis to give rise to stridor or dyspnœa. It is to be noted, however, that Professor Fränkel's cases were treated by small doses, very cautiously increased. Some of the other observers expressly state that they have refrained from treating cases where any additional swelling might cause stenosis of the larynx, but in one such case tracheotomy had to be performed "as a prophylactic measure." With regard to ulceration, most observers record that the ulcerated surfaces were, as a rule, at first covered with a greyish layer, but afterwards became clean and healthy, some of them actually healing. In some instances ulcers formed where none had been seen before, and in other cases disintegration and healing might be seen taking place side by side. Professor Fränkel describes the changes in ulcers as similar to those seen after local treatment but more rapid in their development. He records one case which he regards as absolutely cured both in lung and larynx, but none of the other physicians or surgeons lay claim to more than the production of temporary improvement. As to the after effects in the infiltrated parts there is considerable difference of experience. With the subsidence of the swelling induced by the treatment a certain amount of disintegration has been observed, small sloughs forming upon the surface, leaving granulating wounds beneath, which showed every disposition to heal. Other forms of infiltration are described which become smaller without any breach of surface, whilst a third variety is recorded in which the superficial covering of the swelling slouged off, leaving behind it small masses of caseating cells, which were subsequently thrown off in their turn. In some of the cases of laryngeal disease there were marked lesions in the intestine also, and, in a few instances, the treatment was followed by diminution of diarrhœa. In one of the few fatal cases it was found (by Professor Fränkel) that the fluid had caused necrosis of the tuberculous tissue without annihilating the bacilli. In the intestine the tissue was so much destroyed that the serous membrane was laid bare.—*Brit. Med. Journal*

THE COST OF HORSE LABOUR.

By Prof. WRIGHTON, Downton.

One fundemental question connected with the prime cost of tillages is the cost of maintaining a horse upon a farm for one working day. When the cost of horse labour is estimated at 2s. 6d. or 3s. per day, it is often uncertain whether the man or boys' wages are included. In estimating the cost of maintaining a horse upon a farm, the general principle should be that of a covering estimate, and if the various items of food, shoeing, harnessing, depreciation, interest, &c., are fairly taken, a farmer's horse ought not cost more than £26 to £28 per annum. I arrive at this conclusion in the following way:—

FOOD.

May 27th to September 30th.
126 days—18 weeks.

	£ s. d.	Cost per week. s. d.
18 bushels of oats at 2s. ...	1 16 0	2 0
18 weeks' grazing at 2s. ...	1 16 0	2 0
18 weeks' cut fodder at 3s ...	2 14 0	3 0
	£6 6 0	7 0

October 1st to May 27th.
238 days—34 weeks.

	£ s. d.	Cost per week. s. d.
68 bushels of oats at 2s. ...	6 16 0	4 0
8½ bushels of beans at 4s. ...	1 14 0	1 0
17 cwt. of hay at 3s. ...	2 11 0	1 6
Straw chaff	1 10 0	0 10
	£12 11 0	7 4

I have allowed 1 bushel of oats with grazing at night and cut fodder during summer, and 2 bushels of oats with ½ bushel of beans, ½ cwt. of hay per week and cut chaff during the winter, and I find the cost of food to be £18 17s. for the entire year. In this estimate the use of straw for litter is set off against the value of the dung.

STABLING.

Under this head would be included the expenses incidental to lodging a number of horses, such as a supply of combs, brushes, lanterns, candles, buckets, forks, &c. There are also certain expenses connected with keeping up harness, mangers, racks, pavements, and stable fittings generally. As to rent for farmer's stables, it seems unnecessary to charge any, because we are accustomed to look upon rent as a per acre charge levied upon the total area of the farm, and it is charged accordingly upon each field in due proportion, but not upon house, stables, and buildings. I shall charge the horse £1 per head per annum for all expenses connected with the stable utensils, &c.

LITTER AND STRAW CHAFF.

I propose to sink this item entirely. Having charged marked price for horse corn, we are entitled to credit the horse with the manurial value of the residue. According to Sir John Lawes, the manurial value of 1 ton of oats, after passing through the animal's body, is £1 10s. 9d., and the manurial value of 1 ton of beans is £3 3s. 5d. Now, each horse is allowed 86 bushels of oalts per annum, besides 1 qr. of beans, which latter will not leave an appreciable value in manure residue. I shall, therefore, add the 8½ bushels of beans to the oats, making 94 bushels, all to be taken at 40 lb. per bushel. This gives 3,760 lb, or 1 ton 13 cwt. 3 qrs., the residual

manurial value of which will be £2 11s. 1d. Two bushels of straw chaff weigh 10 lb, and during the winter a horse will eat (in 238 days) 2,380 lb., which I value, less its manurial value, at £1 10s.

Shoeing, Smith's Work, &c.

The blacksmith's bill may be taken at £2 per horse. Bayldon puts it at £1 10s., and Morton at £3 7s. 6d., including all smith's work on the implements and horses. Confining myself to what strictly belongs to the horses and implements, I think £2 fair. Harness.—I adopt Mr. Morton's estimate of 13s. 3d. per horse per annum as probably rather above the cost usually incurred. Depreciation and risk in the case of old horses, and idle time and risk in the case of young ones, may be taken together. If the average value of a farm horse is taken at £30, these items may be taken, as covered, at 10 per cent., or at £3 per annum including farrier. Interest would be ordinarily charged at 5 per cent. on £30, or at £1 10s. per horse per annum.

Attendance.

As already mentioned, all manual attendance is better taken in the weekly wages account, and, therefore, must not be charged against the horses. On the other hand, it is true that, to a certain extent, horses and hands are kept to wait upon horses, as, for example, to cart green fodder. It is difficult to estimate such an item as this, but one pony or horse and boy would be able to do such work for a large number—say for 100—and if this be granted, 1-100th part of the keep of one horse and boy would be charged against each horse on this account. Roughly taking the cost of maintenance at £40 per annum, each horse would be debited 8s. per annum for this particular. Summarising these various items, the total cost of maintaining a horse upon a farm may be stated as follows:—

	£	s.	d.
Food	18	17	0
Accommodation	1	0	0
Litter		—	
Harness	0	13	3
Shoeing and blacksmith	2	0	0
Depreciation and risk	3	0	0
Interest	1	10	0
Attendance (horse labour) ...	0	8	0
	£27	8	3

Cost Price of Horse Labour per Day.

In estimating the actual cost to the farmer of horse labour, it is necessary to make an estimate as to the number of working days in the year. I get rid of the broken days due to sudden rain or compulsory idleness by taking into account the fact that during summer the horses often work many hours beyond usual time, and allowing one to stand against the other. Of the entire year of 365 days, I take out fifty-two Sundays, three holidays, and thirty days unfit for tillage or out-door work; in all eighty-five days. I think this is liberal, except in the case of the stiffest clay soils, which can only be worked or carted upon in favourable weather. This leaves a balance of 280 days over which the expenses of maintaining horses must be spread, and the result of such a calculation is 1·95s. per working day. In the meantime, I assume the actual cost, for practical purposes, to a farmer of keeping up his horses at 2s. per working day.

I can see no objection to assuming 2s. per working day, and £28 per annum as the cost of horse maintenance for purposes of calculating tillages, and this figure may be used as covering all expenses of horse labour on farms throughout the year.

ON EXTRA-UTERINE PREGNANCY IN THE CAT.

By D. J. Hamilton, M.B., Professor of Pathology, Aberdeen University.

Quite apart from the practical issues bound up with it, the subject of extra-uterine pregnancy considered from the purely biological point of view is one of great interest. The case which I am about to describe occurred in a cat, and is worth recording from extra-uterine pregnancy being a somewhat rare condition in the lower animals, as well as from the unique attachments which the pregnancy had contracted with neighbouring parts.

It is asserted that there are three situations in which primarily the embryo or embryos may be found: *Firstly* occupying a Fallopian tube; *secondly*, within the ovary itself; and, *thirdly*, growing from the peritoneum. The great majority of extra-uterine pregnancies, in Man at least, are acknowledged on all hands to be tubal in their origin. The fœtus grows within the tube until about the end of the second or the beginning of the third month. It then bursts forth in one or two directions, either into the peritoneum or into the loose cellular tissue between the layers of the broad ligament.

In the case of the fœtus escaping into the peritoneal sac, which is the commoner of the two occurrences, the parent dies sooner or later if unrelieved, and usually from abdominal hæmorrhage. The fœtus, however, on rupturing into the abdomen need not *immediately* perish, nor need the condition prove *at once* fatal to the mother. On the contrary, the embryo may continue to grow in the peritoneal cavity until full time is reached, the placenta remaining adherent to the Fallopian tube, and the umbilical cord escaping through the rupture in its wall. The lacerated edges of the wound cicatrise, so that if examined some time after the accident has happened the cord is found to issue through an aperture with a regular clean cut margin (*See* Chiari's case, *Zeitschrift für Heilkunde*, vol. viii., 1887, p. 127).

Although the tube usually ruptures, yet it has been alleged that in some instances it goes on stretching up to the full term of gestation. A case recorded by Chiari (*loc. cit.*, p. 128) appeared to have been of this nature. The child was fully nourished and was found lying in a sac supposed to be the distended Fallopian tube. A layer of muscular fibre lined the sac, said to be that of the tube in a state of hypertrophy. It is quite possible, however, that an extra-uterine pregnancy, originally tubal, might rupture into the broad ligament, become encysted, and, as affirmed by Tait, receive a covering of muscular tissue from that membrane. The distended broad ligament might thus be mistaken for a Fallopian tube.

Where the rupture occurs into the broad ligament, the case may ultimately prove fatal or not to the parent according to circumstances. Thus a lethal termination may be avoided by the fœtus dying at an early period of development. It becomes encysted and absorbed, or may be discharged piecemeal through an abscess. Sometimes the fœtus after being encysted calcifies, and is thus converted into a *lithopaedion*. Such a fœtus may remain in the tissues of the mother for a matter of from thirty to forty years. A common accident, when the fœtus ruptures into the broad ligament, is hæmorrhage from separation of the placenta. The blood escapes between the two layers of the ligament, and is a fertile source of one variety of pelvic hæmatocele.

Many explanations have been offered to account for these tubal pregnancies. It is generally stated that in the normal course of events the human spermatozooid meets the ovum somewhere in the Fallopian tube.

Some say the union occurs close by the uterus; others that it take place at the fimbriated end; while again it is asserted that the meeting point is about the middle of the tube. The last of these views has met with most acceptance. Tait, on the other hand *(Ectopic Pregnancy and Pelvic Hæmatocele*, 1888*)*, holds that impregnation is entirely uterine, that the lash of the cilia in tube is towards the uterus, and that this is the natural safe-guard against tubal impregnation. When the tube suffers from any injury whereby the movements of its cilia are interfered with, as in catarrh, there is a liability from the absence of this safe-guard to the spermatozooids passing up the tube and impregnating the ovum before its descent is completed. Another explanation afforded by Spiegelberg *(Text-Book of Midwifery, Eng. Transl.*, N. Syd. Soc., 1887, p. 420*)* is that strictures of the tube, as from old adhesions, hinder the ovum from getting down but may not prevent the spermatozooid piercing upwards.

The second alleged variety of extra-uterine pregnancy I have mentioned is where the ovary itself becomes the seat of impregnation. Much doubted as the possibility of this occurrence is by competent authorities, there are now at least thirteen *(Spiegelberg)* records of autopsies where an ovarian pregnancy is held to have been revealed. The ovum is said to be retained in the Graafian follicle at the time of rupture, and to become impregnated by the spermatozooids escaping from the end of the Fallopian tube. There is, further, the possibility that the fimbriated extremity of the tube may be adherent over a ripe Graafian vesicle and that ovarian impregnation may thus be favoured, it being granted that the spermatozooids have been able to make their way thus far up the tube. Such a series of events, however, seems conjectural and is certainly not likely often to happen. A fallacy connected with the interpretation of the appearances in cases of broad ligament fœtation, namely, that the ovary is often stretched over and seems to be the source of the tumour, may have gone far to swell the records of this accident. Even granting that the above thirteen cases were all genuine instances of ovarian pregnancy, this form still remains, admittedly, the rarest of all varieties of extra-uterine fœtation.

A third contingency, howevey, may come to pass, namely, that the ovum after impregnation falls into the abdominal cavity. Tait *(loc. cit.*, p. 13*)* denies the possibility of this mishap on the grounds that the ovum would at once be destroyed by the digestive action of the abdomen. The abdomen, as Leopold's researches *(Archive für Gynaekologie*, vol. xviii., 1881, p. 53*)* have shown, has an extraordinary power of digesting the soft tissues of the dead fœtus. Whether it has the same effect upon the freshly impregnated living ovum may be questioned, and indeed cases such as this I am about to record seem to traverse any conclusion in the affirmative.

The cat from which I derived the beautiful specimen now in my possession was given to me by Professor Stirling some years ago. He found on killing the animal that the abdomen was occupied by several tumour masses, and judging that it was more a pathological subject than one suited for physiological purposes he sent it over to my laboratory. Being busy at the time, and not recognising the nature of the tumours from the fact of their being so bound up with the abdominal organs, I gave directions to have the viscera cut out and placed in a preservative fluid. To my astonishment on coming to examine the parts some time afterwards, I found that each tumour was a well developed kitten lying in the peritoneal sac. I had the whole preparation carefully set up, and as it now stands the description of it is as follows:—

There are four fully developed kittens all contained along with their adjuncta within the peritoneal cavity. Three of these are amassed in a somewhat pyramidal conglomerate measuring 7 by 6 ctm., and arising from the matting together of the parts concerned by dense fibrous adhesions. The kittens lie close to the middle of the body of the uterus, and are rolled up in a portion of the great omentum which is closely stretched over the sac in which each is contained. Running through the centre and so forming the axis of the tumour-like structure are the uterus and lower part of the intestine. The uterine horns had unfortunately been cut off close to their peripheral extremities, but sufficient of them remains to show that they are free from anything in the shape of a fœtus—indeed, so far as one can judge, they seem to be in their virgin state. The body of the uterus is firmly clasped by the tumour mass, and its channel appears to have become impervious, apparently from the pressure of surrounding parts. Each of the three kittens involved is contained in a single membrane, rough internally but quite smooth externally. The exact manner of attachment of the placentæ cannot be distinctly traced owing to the fusion of the component elements.

The fourth fœtus is entirely detached from the tumour formed by the other three. It has been growing from the lower edge of the great omentum, and appears to be the longest, measuring as it does between 12 and 13 ctm. from the tip of the nose to the root of the tail. It is coiled up and like the others is enclosed within a single membrane, rough and granular internally but glabrous on the exterior. The membrane is so tough that it can be readily handled without injury. The placenta is situated upon the interior, or rather seems to form part of this membrane. The area occupied by it is somewhat crescentic and from end to end measures from 2½ to 3 ctm. From it comes off what looks like a bunch of fibrous cords, but on closer inspection each of these proves to be an umbilical vessel. Nearer the fœtus they are twisted into a rope-like texture, which makes a couple of coils round the right hind limb immediately above the foot. They afterwards penetrate the abdomen in the usual situation, the abdominal wall being perfectly closed.

The omental basis to which the placenta is attached is constituted by a few of the islands of fat naturally present within the membrane. The loose omental trabecular tissue for some distance above this has become adherent to and bound up with these particles of fat so as to constitute a solid stump, to the free extremity of which the placenta is united.

There is an entire absence of anything like recent peritonitis, and the only evidence of its having existed formerly is in the localised adhesions whereby the three first described fœtus are lashed together and to the body of the uterus. The nutrition of the mother like that of the offspring was excellent.

From the foregoing it will be gathered that, while the uterus was free from any signs of utero-gestation, four kittens had formed a placental attachment to the peritoneal surface and had derived their maternal sustenance from the peritoneal blood-vessels. There is this peculiarity in the case as compared with most of those previously recorded, namely, that the embryos were not all attached to the peritoneum in the neighbourhood of the uterus and tubes, but that one of them was growing from the great omentum and was quite free even from any inflammatory adhesion to the internal organs of generation. As a rule, when the placenta has attached itself to the peritoneum, it is that portion of the membrane adjacent to the Fallopian tubes which is selected.

It has been supposed that on account of this part of the peritoneal sac being practically continuous with the mucous membrane of the tube, it bears some analogy to it. It represents, moreover, the portion of the pleuro-peritoneal sac which gives birth to the essential elements of the ovary, and hence has been held to be essentially

genital in its character, and has been looked upon as the only part of the peritoneum which may vicariously take on the function of a uterus. The above case disproves this theory, for although certainly three of the fœtus were growing from the pelvic peritoneum, the remaining fœtus was far removed from it. It seems more rational to suppose that the usual attachment to the pelvic peritoneum is to be accounted for by the ova falling into it more readily than into other subdivisions of the sac.

At the same time it seems one of the most extraodinary phenomena in nature that the wall of a serous cavity should thus assume functions entirely foreign to it

Tait and others have alleged that these extra-uterine pregnancies with a peritoneal attachment of the placenta have originally been tubal, that the tube has burst, that the escaped placenta has wandered outwards, and that, slug-like, the placenta has fastened itself to some part of the peritoneum. I cannot bring myself to believe in such an occurence, more especially when we find as in the instance just related that not only one fœtus has escaped, but that four of them have each a separate point of connection with the peritoneal membrane. The only explanation admissible under these circumstances is that the fecundated ova fell either from the ovary directly or from the end of the tube into the abominal cavity. and took root upon the parts of the peritoneun with which they came in contact. If it be the case that they were rejected from the tube, it comes to be a question how this arose. Quite possibly it may have been through a suddenly reversed peristalsis.

The Journal of Comparative Pathology.

ON HORSE BREEDING.

By the Duke of Marlbourgh

From a long letter in the *Live Stock Journal* we take the following extract.

There is a natural fatuousness on the part of the man to believe that descent and continuance repose in his loins rather than in the organs of gestation of the female. Our own system of tracing hereditary descent has invariably been based upon this theory. The system of continuance of ancestry has invariably been attributed to male descent, whereas very little attention has been given to ancestral qualities derived from the female side. As a matter of fact the offspring of the human race, as well as of other higher breeds of mammalia, owe probably six parts of their continuance of type to the female to four parts on the male side, and, I think, this average is a very liberal estimate in favour of the male continuance. Be this, however, as it may, it has become an accepted fact, that any way, so far as men themselves are concerned, they carry in them the qualities of their mothers often to the entire exclusion of their male parent. If this has any true foundation with regard to the human race it would appear to be a very reasonable thing to apply these conceptions to our system of breeding pedigree animals, and, although so far as cattle are concerned, we are breaking away from the tradition of preserving an unbroken line on the sire's side, we still are unwilling to admit that it is in the nature of the dam that the problem of breeding really commences. In our own experience how few sires ever show the impressing qualities in breeding which we may say are almost invariably present in a female, either horse or cow; and I venture to believe that if our breeders would turn their attention to this side of the problem, results would be far more accurate than they often are at present.

The reason why I attribute great importance to these facts is that we must look to the perpetuation of our breeds, both in cattle and horses, in this country, for keeping going a trade with the foreigner, especially the American and South American market. Now the foreigner does not wish to come to England for the simple purpose of buying stock; he can breed stock at one-tenth of the price of what an English farmer can do, and he can ship this stock back to England either in the form of dead meat or live horseflesh, and knock all our breeders out of the market. What he cannot do is to devote the time and attention which our early breeders bestowed on establishing the great breeds of horses and cattle in this country. He cannot produce that high-class sire and dam which are so essential for the purpose of renovating and improving a half-bred strain any more than it would pay the Americans to go in for a minute industry such as silkworm culture, or the careful gardening of a vineyard such as Lafitte or Closvouget. It would not be possible, in fact, in a new country to devote the time and care which our breeders bestowed on the improvement of our English horses and cattle; besides it is a question whether the advantages we possess in soil and climate do not give us in some ways a monopoly in being able to carry out this work of improvement in animal types, and if this be so it stands to reason that the only way by which we shall be able to maintain our position as the purveyors of stock horses and cattle to foreign nations will be by breeding not the "ordinary article of commerce," the beast which is to be fatted in the cow byre, or the horse which is to run in a London van or tramcar, but the "sire or the dam" of a future race of fat steers and hardy horses that would be bred in countries other than our own, and of which we should be delighted to receive back the produce, at the cheap prices the foreigner can afford to sell them to us in our Free Trade ports. Unless we succeed in maintaining this position, the complaint which is perpetually being made that the foreigners are buying our best mares and sires will have strong foundation in fact, and we shall arrive at a condition of things when this country will be full of cattle not greatly superior to what may be found in America, and of horses not greatly differing in qualities of speed and endurance, as well as style, from what the French, the German, Hungarian, and the American possess.

With regard to the question of breeding stallions in England, I believe no greater mistake exists than selecting the present class of animals that now receive the service premiums from the moneys which were originally given to the Royal Plates. The animals which are used for this purpose are all of them clean thoroughbreds of the racehorse or steeplechase type, and these horses are crossed with all the half-bred stock of the country. Now the half-bred stock of England is by no means so good as it should be, and is very inferior to what I call the "ground pan" blood in other countries. In an article I wrote on American Trotters in the *Fortnightly Review* for the month of February, I alluded to this difference be-

tween the common animal in England and in America. There is at the bottom of our English breeds the cart-horse type. You will find this crop up in the Yorkshire Coach-horse and in all our ordinary roadster classes, even the Hackney, especially the Norfolk-bred animal, which has a large mixture of Punch in him. The Hackney is deficient in staying power, and also in size. An animal under 15.1 hands is no good for general purposes of carriage work, and a horse that cannot go its twenty miles without being knocked up is not much good for the busy man. The American or Hungarian-bred horse will do its thirty or forty miles and be none the worse, but I doubt if there are many of our English-bred horses which have got anything like the stamina in them that is to be found in the Hungarian Uquha or the American half-bred trotter.

Now, both the Hungarians and Americans have proceeded upon a different plan of breeding from that adopted in England. In Hungary, the ordinary breeding mare of the country is seventy-five parts Arab blood, and may be therefore virtually called a thoroughbred. To cross this animal with the English racehorse is to make an outcross which must have the effect of giving size, while the stamina would come from the mare. In America the improved trotter is the result of using the old half-bred trotting sire upon thoroughbred English racing mares, and the consequence has been most remarkable; the half-bred sire has given size and constitution, whereas the thoroughbred mare has introduced the blood. Our English plan is the reverse of this; we prefer using the thoroughbred sire on the half-bred mare; and the consequence is that all the diversities of the female are perpetually reproduced, whereas the similarities of the male are only in exceptional instances perpetuated. All the uncertainty which breeders complain of in breeding general purpose horses results from this fact; we forget perpetually the point which I contend for, viz., that six parts and more of the continuance comes from the dam's side, whereas not more than three or four are to be attributed to the male. The abuse of the racehorse stallion in England is astonishing. It is impossible to suppose that such a sire can produce any evenness of result on the half-bred stock of the country; we require to proceed in horses exactly as we proceed, if we wish to obtain success, with regard to cows. It has been found that the persistent in-breeding of Bates or Booth cattle has produced deterioration and loss of stamina, but where breeders have sacrificed their pedigrees and have procured bulls of Scotch descent, and crossed these with Bates and Booth thoroughbred heifers, the result has been to improve the type and also to procure uniformity, this uniformity coming through the dam's side. In order to work out this same line of breeding with horses, we should procure thoroughbred mares of substance and quality with an undoubted record behind them; these mares should then be bred to the very best half-bred hunting sire that can be found. Now it just happens that this class of animal exists in Ireland, from that country come the finest class of hunters that these islands produce; they combine size, bone, quality, and blood, and have sufficient pedigree behind them to give them a power of permanence in their produce. As a rule this class of animal is castrated as a foal, and is sold over in this country as a 16 stone hunter. I venture to think that this is throwing away the very finest blood the country possesses. To arrive at the exact hit-off in blood which the Irish horse represents is almost an impossibility; this animal, in its way, is a kind of phenomenon in breeding as the American trotter was which was produced from the original old Abdalah blood. This American trotter was a half-bred animal when he was used upon thoroughbred English racing mares, but he carried in him that exact hit-off in type which gave the characteristic of speed to the trotter. The same thing would result by using the Irish-bred weight-carrying hunter stallion upon well selected throughbred racing English mares. To go on breeding, however, with thoroughbred racehorses upon half-bred mares will never do anything to improve the breed of horses in this country, or to produce anything like uniformity of type.

The object of the English breeder should not be to produce the general purpose animal and the army remount; these animals are being imported from abroad at a much cheaper price than the English breeder can produce them. What our farmers must make money by is the breeding of sires and dams which, when they go into the auction ring, are suitable for the foreigner to purchase at a good price for foreign use in breeding. Unless we can maintain our breed of horses at this level there is no money in horse-breeding in England. Every farmer knows that by the time an ordinary animal arrives at the age of four years he has cost him a larger sum to rear than he can sell him for, unless it is an exceptionally good specimen and one that will suit the fancy market, either for a London carriage horse or a rich man's hunter. The number of misses in this direction of breeding is far greater than the number of hits, hence we hear the complaint that our brood mares are being sold out of the country and that foreigners are getting hold of our best stock. At the present moment everybody has gone crazy about breeding Shire-horses. In Scotland they breed Clydesdales. Both these breeds have been very much improved of late years, and there has not yet been time for the deterioration caused by inbreeding to set in; yet so prejudiced are these two classes of breeders that it is impossible to mix the breed: the Clydesdale man will not admit the Shire-horse, and the Shire-horse man will not admit the Clydesdale horse. As a matter of fact the prejudice is ridiculous. The Clydesdale mare has more blood than the Shire. The Clydesdale has no doubt a good deal of Yorkshire and north country hackney blood about it. The Shire-horse descends from the old Lincolnshire heavy-boned draught animal, and has probably very little other blood in him at all. Now the Clydesdale is a better walker, has far finer action, and is, as a rule, sounder than the Shire; the Shire, however, has greater size, greater length, and is heavier. It would be impossible to conceive two better breeds to experiment with from the point of view which I urge. The Shire stallion should be crossed upon

the Clydesdale mare, and from such a cross I anticipate the same favourable results that would ensue from the crossing of the Irish hunter upon the thoroughbred English racing mare.

I am quite aware that all these views will be looked upon as heretical by all old conservative breeders. I point, however, to results, and the question I ask of these breeders is, how often according to their present system does the progeny bear out their expectations? Now the reason for this disappointment is, I believe, the foolish idea that the male is the transmitter of the type in breeding, instead of, as I contend, the female; size and constitution may come from the sire, and other qualities in a smaller degree, but it is undoubtedly through the dam that quality and courage descend. It is not so much a matter of importance what sire is used, provided the animal is a suitable one, so long as the dam has behind her pedigree, blood, and record of performance either of her own, of her descendants, or of her immediate ancestry.

Your obedient servant,

Blenheim, Woodstock, May 4th. MARLBOROUGH.

Army Medical Examinations.

Several letters have been received, says *The British Medical Journal*, enquiring whether the new rule which renders candidates ineligible who have failed twice at the examinations for the Army Medical Staff is retrospective. We have communicated with Sir Ralph Thompson (Permanent Under-Secretary, War Office), who states in reply, that the ineligibility of candidates for the Army Medical Service does apply to those candidates who have already competed twice.

This seems a good rule and one worthy of introduction into other departments.

Artificial Eyes for Horses.

Under the heading of Veterinarian we read in *The Field* of May 10, in reply to W. L.'s inquiry as to artificial eyes, "I may mention that some years ago I introduced a very good artificial eye, made of dark horn, the thin capsule being such a good imitation that a few yards off no one could have detected it."

This is signed by George Fleming.

The next "reply" is from a Mr. Stoddard, whose experience was with a vulcanite artificial eye. The mare had to be cast in order to insert the eye, and the result was that when the eye was removed the cavity was found inflamed.

The results of experience differ, and more experience is required to enable us to estimate the real value of these artificial eyes. Where are they obtainable?

A Disputed Account.

An action was brought at Belfast Quarter Sessions, by Daniel Drennan, of Drumbeg, County Down, farmer, to recover from James Gregg, of Lisburn, veterinary surgeon, the sum of £20 1s, damages sustained by plaintiff, by reason of defendant having, on the 15th March, 1891, in consideration of a certain fee or reward, undertaken to attend and skilfully treat a certain cow, the property of the plaintiff, whilst calving, which he failed to do, the defendant having so carelessly and unskilfully attended said cow that she died, to plaintiff's loss in the amount aforesaid.

Mr. Thomas Harrison, Barrister-at-Law (instructed by Mr. John Dinnen), appeared for plaintiff; and Mr. W. M. M'Grath, Barrister-at-Law (instructed by Mr. Frank Kerr), for defendant.

Evidence having been heard,

His HONOUR summed up the case, and

The jury, after a brief deliberation, returned a verdict for the defendant.

His HONOUR accordingly dismissed the case on its merits.

Is Dishorning Painful.

A striking proof says *The Standard*, of the suffering caused by the dishorning of full-grown cattle is afforded quite fnadvertently by a Scotch farmer who pursues the practice. In comparing the results of feedind two Canadian and two Irish beasts, Mr. M'Jaunet, of Over Inzievar, Fifeshire, writing to the *North British Agriculturist*, states that on October 11th the former weighed respectively 9cwt. 1qr. 7lb. and 9cwt. 2qrs. 7lb. On the 18th of October these Canadian animals were dishorned, and on the 25th their weights were reduced to 9cwt. and 8cwt. 3qrs. 14lb. Thus, instead of increasing in weight, these beasts, in consequence of the suffering and shock caused by dishorning, lost 35lb. and 77lb. respectively. With unconscious sarcasm, Mr. M'Jaunet adds:—"They, however, regained their original weight in a month or so."

"A Learned Assistant."

A member writes: "I notice an amusing letter in the B. M. Journal of April 18th, headed 'A Learned Doctor.' It reminds me of quite as bright an example of the learning (?) of some of the profession in England. A man died here a few days ago, and the cause of his death was certified as 'cyrosis of liver.' An assistant was attending him, and, during the patient's illness, he (the assistant) informed several people that his patient was spitting up his liver, and, when the patient died, the learned M.R.C.S., stated that the poor patient had to go, as he had spat up all his liver."—*Brit. Med. Journal.*

The Advance of Hygiene.

Science, which is always revealing some new horror to us, has its compensating moments. Dr. Duncan has now come to the relief of nervous humanity by declaring that sewers are not so black as they are painted, and that a man may do worse than sit over an open drain for the benefit of his health. "The air of a sewer," says Dr. Duncan, "is much better from a chemical point of view, than the air of crowded churches." We have all heard of truth at the bottom of a well, but it has been reserved for science to discover Health at the bottom of a cesspool.

* * *

THE SONG OF THE SICK GIRL.

Dear mother, I am far from well,
My weary limbs are racked with pain;
O, let your darling sit and smell
The perfume of the open drain.

The pastor's eyes to-day will search
Along the pews for me in vain;
I dare not risk the crowded church—
I'll sit and rest beside the drain.

I want to see another May,
And be the Queen they crown again;
And so, dear mother, let me stay
And slumber by the open drain.

Then go to church, my mother dear,
And pray within the sacred fane
That I may find, while staying here,
Salvation down an open drain.

* * *

It is proved by statistics that the healthiest men are the sewer men, who pass their lives in drains. Next, please?—*The Referee.*

REVIEW.

A TREATISE ON DISEASES TO WHICH THE HORSE IS LIABLE.[1]

It is impossible not to admire a man who, though placed in the most disadvantageous position for book writing, still overcomes all obstacles such as would be sufficient to deter most ordinary mortals, and succeeds in giving to his profession a useful, practical work, the result of careful observation and elaborate record.

Such is the book before us, printed, bound, and published in India. We here have presented to us a work which, in its style, is unique in Veterinary literature; it is a book on diseases and lameness of the horse, and the method adopted for describing these is according to the nomenclature of the Indian Veterinary Regulations; this is a convenient basis to work on, especially for a book so eminently practical.

Class I. General Diseases, includes the various fevers, which it may interest the English Practitioner to know are no less than six in number, viz., Simple, Traumatic. Catarrhal, Bilious. Anthrax, Relapsing, it is possible that others might be added to this list, but it will be at once seen that the Veterinary Surgeon on first going abroad has something to learn. The article on Surra or Relapsing Fever, is from the pen of the late Professor Steel, which adds a melancholy interest to the subject, which is here carefully and fully described, and as it was written shortly before his death we may take it that it represents his mature views on this remarkable disease.

There is a notion in this country that when the Veterinary Surgeon goes to India he goes there to live a life of luxury and idleness, and that he has nothing to do or learn. Those who have lived and worked in that country assure us that India opens a nearly untrodden field for scientific and practical research; that the Veterinary Surgeon is, from the moment of taking up his duties, confronted with new and strange diseases; that he has absolutely an unrivalled experience in liver and bowel disease in all its forms; that his surgical knowledge is increased by hundreds of operations never seen by his colleagues at home, in fact, if he cares to work, he has a great field for experience and clinical observation.

Now it is just on those lines that this book has been worked out. Mr. Adams' long Indian experience amongst a special class of horse, liable to every disease a horse can have, (we allude to Australians) has enable him to present us with a book which to the Army Veterinary Surgeon should be indispensible, whilst to those of us who practice in these latitudes there is much oe treatment and cure, disease and therapeutics, lameness and diagnosis, which should render the book a most valuable addition to our armament.

We can strongly recommend the book and heartily congratulate its Author.

[1] A TREATISE ON DISEASES TO WHICH THE HORSE IS LIABLE: By W. S. ADAMS, M.R.C.V.S. A.V.D. Published by the Lawrence Asylum Press, Madras.

CORRESPONDENCE.

THE RECOGNITION OF PLEURO-PNEUMONIA.

SIR,

In your issue of May 9th the observations about Professor Williams, and the alleged detection of Pleuro-Pneumonia Contagiosa amongst American cattle landed at Deptford, caused me some surprise, I accordingly requested Prof. Williams to send sections of Pleuro-Pneumonia Contagiosa, and the so-called American (or official) Pleuro-Pneumonia Contagiosa. He complied with my request and forwarded two specimens, one of which was obtained from the portion of lung delivered to him by Dr. Wray, the American Inspector.

The two sections obtained from Prof. Williams have been compared with a section of lung I obtained during the memorable outbreak of Pleura-Pneumonia Contagiosa at Chicago in November 1886, with the following result. I find that while the English and Chicago sections of Pleuro-Pneumonia Contagiosa are identical, that is, showing the same microscopical lesions, the Deptford section (or so-called Official Pleuro-Pneumonia Contagiosa) is as different from the other two sections microscopically as chalk is from cheese, being nothing more or less than a splendid specimen of Broncho-pneumonia.

I now send you two photomicrographs taken from those sections, and it is for you, Mr. Editor, to say if they are both specimens of the same disease, and if not, what are they? You say the "Veterinary profession is not so easy satisfied." Have you any evidence or facts whereby you can enlighten the Veterinary profession on this subject? Certainly from your position as Veterinary Editor of the Profession's only weekly Journal, something more than a "Modern Society." statement is to be expected.

THOS. BOWHILL, M.R.C.V.S.

Darlington, 17th May, 1891.

COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED:—Messrs. T. Bowhill, G. E. Nash, "S. J" "Belfast News-Letter."